

Remarks

By way of the foregoing amendments, reference numerals have been deleted from the claims, several editorial changes have been made particularly to ensure proper antecedent basis, and claim 1 has been restructured with features thereof now appearing in new claim 12.

Claim Rejection

Claims 1-11 were rejected as being unpatentable over US 5,588,182 (Brownlie) in view of EP 3605434 (Tölle). According to the Examiner, Brownlie discloses all of the features of the claims except a chamfered edge on the hinge pin or a spacer member having the form of a complete cylinder. For the missing features, the Examiner refers to Tölle and argues that it would have been obvious to the skilled person at the time of the invention to make the hinge of Brownlie using a hinge pin having a chamfered end and a cylindrically shaped spacer member where material is removed from the central part of the hinge arm between the pins for ease of inserting the hinge pin and to save material and manufacturing costs as taught by Tölle, and with the recess positioned on the removable door and the hinge arm on the cabinet frame member. It is respectfully submitted that the combination advanced by the Examiner is improper for the following reasons, and therefore the rejection should be withdrawn.

Turning first to Brownlie. This document shows a hinge comprising an arm (12), a pin (122), a hinge recess (31) and a hole (132) for receiving the pin. The recess comprises two orthogonal walls providing a corner (marked "C" by the Examiner). The purpose of the hinge of Brownlie is to enable automatic locking of the door in the open position, which is achieved by the action of locking tabs (126) and slots (136). To close the door, it must be lifted, to release the tabs from the slots, and rotated while lifted to stop the tabs falling back into the slots.

The Examiner asserts that the shaping of the arm (12) provides a spacer member that is spaced from the corner when the pin is in the hole. There is no disclosure in Brownlie that the spacer member as defined by the Examiner is spaced from the corner when the pin is in the hole. In fact, from a closer inspection of Figure 5, it can be seen that the locking tab (126) extends to the outer edge of the arm (12), and

the slot (136) into which the tab fits extends to the wall of the recess (37). It would, therefore, appear that the edge of the arm abuts the corner wall of the recess when the pin is in the hole, at least when and the locking tabs are in the slots.

In the hinge connection of claim 1, the arm is seated in the corner of the recess during assembly of the hinge and the arm can slide along the corner to align the pin relative to the hole. The arm is then unseated from the corner as the pin is inserted into the hole, by means of the chamfer at the end of the pin. This is advantageous, because when the pin is seated in the hole, the arm and the recess can rotate freely relative to one another without frictional forces between the recess walls and the arm.

There is no disclosure of such an arrangement in Brownlie.

The Examiner argues that use of a chamfer edge to align a body during insertion into a hole would have been obvious in view of Tölle. However, the chamfer recited in claim 1 does not merely align the pin in the hole, it also effects separation of the arm from the corner of the recess.

This arrangement is clearly described in the present application at page 4, lines 16-24. When the arm is in contact with the corner, the longitudinal axis of the pin is slightly offset from the longitudinal axis of the hole. The chamfered edge effects movement of the arm away from the corner to align the axis of the pin and the hole. At page 2, lines 9-10 of the description, it is stated that the degree of chamfering can be matched to the required spacing of the arm from the corner of the recess.

Neither Brownlie or Tölle teach use of a chamfered end on the hinge pin to effect separation of the hinge arm from the recess' corner upon insertion of the hinge pin in the hole.

The Examiner also asserts that the spacer member (labelled section "S" of the arm) of Brownlie and the pin are integrally formed and rotatably mounted to the hinge arm. There is no disclosure in Brownlie of the pin being rotatably mounted on the hinge arm. Furthermore, the spacer member "S" as defined by the Examiner is part of the body of the arm and cannot possibly be rotatably mounted relative to the hinge arm.

Turning now to Tölle. The Examiner refers the hinge axle (3) of Tölle as providing a spacer member. However, it is not clear that the axle (3) is in seated

engagement with a corner of a recess in hinge fixing (17) in the first position as now set forth in claim 12. From the drawings of Tölle, it does not appear that the hinge axle (3) contacts the hinge fixing (17), and therefore, the hinge of Tölle does not comprise a spacer member as set forth in claim 12.

In addition, as mentioned above, although Tölle appears to show a chamfered edge on the end of pin (20), there does not appear to be any teaching in Tölle that the chamfered end could be used to separate the hinge arm from a corner of a recess.

Thus a combination of Brownlie and Tölle would not lead the skilled person to a hinge connection as claimed.

The examiner proceeds to suggest that in view of Tölle, Brownlie would be modified to provide the end of the pin with a chamfered edge and by removal of material from the central part of the hinge arm (12) between the pins (122, 124).

If the end of the pin (20) of Brownlie were simply chamfered as in Tölle as suggested by the Examiner, the result would still not yield a hinge connection as set forth in claim 1. To effect unseating of the hinge arm from the corner, the pin and hole are slightly off line when the arm is seated in the corner. Contact of the chamfered edge of the pin with the hole will then effect separation of the arm from the corner. There is no disclosure in Brownlie or Tölle to arrange the hole relative to the pin in such a manner. Therefore, simple provision of a chamfered edge on the hinge pin would not achieve the claimed effect.

In addition, there is absolutely no incentive for a skilled person to remove material from the hinge arm of Brownlie to provide a cylindrically shaped member between the pins. The hinge design of Tölle is completely different to that disclosed in Brownlie, and the Examiner gives no significant reason why the skilled person would modify the hinge arm in such a way. The difficulty of modifying the arm of Brownlie to remove material to provide a cylindrical member would appear to far outweigh any weight reduction. Part of the advantage of the Brownlie hinge would appear to be the simplicity of the design comprising an apparently solid arm with a pin and tab arrangement attached to the upper and lower surfaces thereof. An advantage which would be lost if material from the arm had to then be removed.

Information Disclosure Statement


An Information Disclosure Statement was filed with the papers effecting entry into the U.S. national phase. Enclosed is a duplicate of the PTO-1449 form then submitted, and an acknowledgment that the documents cited therein have been considered is requested.

Conclusion

In view of the foregoing, request is made for timely issuance of a notice of allowance.

Respectfully submitted,

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By 

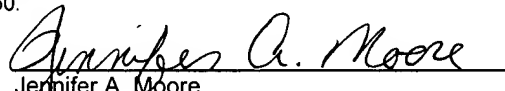
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